

Reply to Final Office Action of November 25, 2009

REMARKS

This application has been carefully reviewed in light of the Office Action dated November 25, 2009. Claims 1-5 remain in this application. Claim 1 is an independent Claim. Claims 1 and 3 have been amended. Support for the amendments is found, *inter alia*, on page 11, second and fourth paragraphs and FIG. 2 of the original specification. It is believed that no new matter is involved in the amendments or arguments presented herein.

Reconsideration and entrance of the amendment in the application are respectfully requested.

Terminal Disclaimer

The terminal disclaimer filed on 09/02/09 was not accepted due to the incorrect application number. In response, Applicant has corrected the error in the terminal disclaimer submitted concurrently herewith.

Claim Objection

Claim 3 was objected to because of informality. In response, Applicant has amended that claim to address the informality.

Reconsideration and withdrawal of the above objection are respectfully requested.

Art-Based Rejections

Claims 1-2 and 4-5 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,672,363 (Sagawa) in view of U.S. Patent No. 7,367,791 (Murata); Claim 3 was rejected under 35 U.S.C. § 103(a) over Sagawa and Murata in further view of U.S. Patent No. 5,476,622 (Moorhead).

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Applicant respectfully traverses the rejections and submits that the claims herein are patentable in light of the clarifying amendments above and the arguments below.

The Claims are Patentable Over the Cited References

The present application is generally directed to a magnetic field molding device for producing a ferrite sintered magnet.

As defined by amended independent Claim 1, a magnetic field molding device used in producing a ferrite sintered magnet includes a die for compression-molding a molding slurry. The slurry is produced by dispersing a powder mainly composed of ferrite in a dispersion medium and injected into the die. A magnetic field generating source for applying a magnetic field to the slurry within the die in a given direction is provided. A temperature control unit is provided for controlling the temperature of the die, into which the molding slurry is injected, and the temperature of the molding slurry by heating the die. The die is provided with a plurality of cavities for producing a plurality of molded bodies for a plurality of the ferrite sintered magnets. The die is provided with delivery paths for injecting the slurry into each of the cavities.

The applied references fail to disclose the above features of amended independent Claim 1 of the present invention. In particular, the applied references fail to disclose, teach or even suggest “the die is provided with a plurality of cavities for producing a plurality of molded bodies for a plurality of the ferrite sintered magnets,” as required by amended independent Claim 1 of the present invention.

Moreover, the applied references are not seen to disclose or suggest “a die for compression-molding a molding slurry, wherein the slurry is produced by dispersing a powder mainly composed of ferrite in a dispersion medium and injected into the die,” as required by amended independent Claim 1 of the present invention.

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Furthermore, the applied references do not teach or suggest “a temperature control unit for controlling the temperature of the die, into which the molding slurry is injected, and the temperature of the molding slurry by heating the die,” as required by amended independent Claim 1 of the present invention.

Furthermore, the applied references are not seen to teach or suggest “and the die is provided with delivery paths for injecting the slurry into each of the cavities,” as required by amended independent Claim 1 of the present invention.

Referring to Murata, Applicant initially points out that the device disclosed in that reference is used for producing a bonded magnet *not* a ferrite sintered magnet.

Moreover, although Murata discloses a second heating means 37 for heating the annular preformed body 81, and a third heating means 46 for heating the annular intermediate formed body 82 (*See, Murata, Col. 13, ¶¶ 5, 7*), one of ordinary skill in the art would appreciate that the disclosed heating means are *not* used for heating the die to heat the molding slurry, as required by amended independent Claim 1 of the present invention.

Accordingly, Murata fails to disclose, teach or even suggest “a temperature control unit for controlling the temperature of the die, into which the molding slurry is injected, and the temperature of the molding slurry by heating the die,” or “the die is provided with a plurality of cavities for producing a plurality of molded bodies for a plurality of the ferrite sintered magnets,” as required by amended independent Claim 1 of the present invention.

Concerning the applied Sagawa reference, as the Office Action states, that reference discloses a rotary disc type-die with a plurality of cylindrical though-holes. (*See, Sagawa, Col. 22. Ll. 32-48; FIGS. 27 and 28.*) However, the die disclosed in that reference is a circulating type-dry die press apparatus. (*See, Sagawa, “brief description of the drawings;” FIG. 27.*) Accordingly, the disclosed die is *not* “a die

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for compression-molding a molding slurry, wherein the slurry is produced by dispersing a powder mainly composed of ferrite in a dispersion medium and injected into the die,” as required by amended independent Claim 1 of the present invention.

Referring to FIG. 27 of Sagawa, the rotary die 2a is rotated by the motor 91 so that each die passes through the positions P2, P1 and P3, successively. The rubber mold 10s together with powder is filled into each die (cylindrical through-holes) at position P2, where the mold loader 70 is set. Then, at position P1, the upper and lower punches 1a, 1b are inserted into each die (cylindrical through-holes) from above and below, respectively. Thereafter a rubber mold 10 containing a green compact is removed from the rotary die 2a at position P3, where the removers 78, 84 are set. Thus, the apparatus shown in FIG. 27 of Sagawa produces molded bodies one by one. In contrast, the magnetic field molding device of the present invention produces a plurality of molded bodies at one time, because it is provided with the die having a plurality of cavities for producing a plurality of molded bodies.

FIG. 39 of Sagawa is a top view of a circulating type-wet die-press apparatus. (*See, Col. 28, ll. 56-67; Col. 25, last paragraph; Col. 26 to 28.*) Reference numeral 40 represents a conveyor and the filling of slurry is conducted at position A by a slurry filling device 42. As one of ordinary skill in the art would appreciate, although the apparatus shown in FIG. 39 is a wet die-press apparatus, it does *not* teach that “the die is provided with a plurality of cavities for producing a plurality of molded bodies for a plurality of the ferrite sintered magnets; and the die is provided with delivery paths for injecting the slurry into each of the cavities,” as required by amended independent Claim 1 of the present invention.

Furthermore, Sagawa fails to disclose or suggest “a temperature control unit for controlling the temperature of the die, into which the molding slurry is injected,

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and the temperature of the molding slurry by heating the die,” as required by amended independent Claim 1 of the present invention.

Moreover, although Sagawa describes that “The obtained green compacts were cured at 120 degrees for 1 hour”, (See, Sagawa, Col. 36, ll. 25-26 (EXAMPLE 4), the disclosed process is for curing the resin contained in the green compacts. One of ordinary skill in the art would readily appreciate that the heating of the die and slurry in the present invention are totally different from the curing in Sagawa.

As pointed out in the present Specification, as a result of the inventive technique of the present invention,

Heating the mortar-shaped die 19 can increase slurry temperature in the cavity 13 more assuredly than heating the slurry before it is injected into the die, and consequently more efficiently reduces viscosity of the dispersion medium in the slurry and improves the dehydration properties of the slurry, thereby improving product yield. As discussed above, the cavities 13 can be uniformly heated even in a die provided with a plurality of cavities 13 or large-size die, to equalize density itself of the molded body as a result. Moreover, heating the mortar-shaped die 19 makes the magnetic field molding device 10 less sensitive to seasonally fluctuating ambient temperature, allowing it to produce a ferrite magnet of stable quality. (*See, Present Specification, P. 16, last paragraph and P. 17, first paragraph.*)

In addition, Applicant points out that Sagawa's disclosed apparatus is used for producing a bonded magnet *not* a ferrite sintered magnet.

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Accordingly, Sagawa does not disclose, teach or suggest the above features of amended independent Claim1 of the present invention.

Since the applied references fail to disclose, teach or suggest the above features recited in amended independent Claim 1, these references cannot be said to anticipate or render obvious the invention which is the subject matter of that claim.

Accordingly, amended independent Claim 1 is believed to be in condition for allowance and such allowance is respectfully requested.

The remaining claims depend either directly or indirectly from amended independent Claim 1 and recite additional features of the invention which are neither disclosed nor fairly suggested by the applied references and are therefore also believed to be in condition for allowance and such all is respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 225-2604 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 03-1366.

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Respectfully submitted,

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